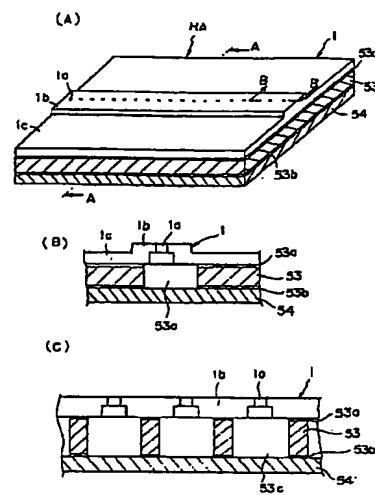


## (54) INK JET PRINTER HEAD

(11) 6-91864 (A) (43) 5.4.1994 (19) JP  
 (21) Appl. No. 4-240383 (22) 9.9.1992  
 (71) BROTHER IND LTD (72) MANABU KATO  
 (51) Int. Cl<sup>s</sup>. B41J2/045, B41J2/055

**PURPOSE:** To obtain an ink jet printer head preventing a positional shift between formed plates, a leakage of ink, and the like.

**CONSTITUTION:** In an ink jet printer head HA provided with an orifice forming part with ink jetting orifices 1a juxtaposed; a membrane plate 1c provided with ink supply paths for supplying ink to the orifices 1a; a laminate 53 overlapped on the membrane plate 1c and provided with ink chambers for supplying ink to the ink supply paths; and a piezoelectric element 54 overlapped on the laminate 53 to apply a pressure to the ink chambers, the orifice forming part 1a and the membrane plate 1c are integrally molded.

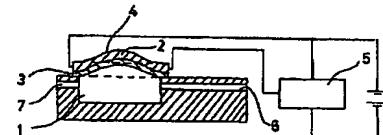


## (54) INK JET HEAD

(11) 6-91864 (A) (43) 5.4.1994 (19) JP  
 (21) Appl. No. 4-247679 (22) 17.9.1992  
 (71) SEIKOSHA CO LTD (72) YOSHIHIRO KONDO  
 (51) Int. Cl<sup>s</sup>. B41J2/045, B41J2/055

**PURPOSE:** To obtain an ink jet head having a shape memory alloy with an improved reliability, a reduced size, and an enhanced density.

**CONSTITUTION:** A pressurizing vibration body 4 formed by securely laminating a shape memory alloy 2 on a shape regulating body 3 is regulated in shape to be deflected upward by the shape regulating body 3. By heating the pressurizing vibration body 4 by a drive circuit 5, the shape memory alloy 2 reaches a transformation temperature and changes in shape to be deflected downward, thus reducing a volume of an ink chamber 1 to pressurize ink liquid inside to jet the ink liquid from a nozzle 7. By interrupting the heating by the drive means, the pressurizing vibration body 4 is regulated into the unheated shape by the shape regulating body 3. By repeating the aforesaid operation, printing is conducted.



## (54) INK JET HEAD

(11) 6-91866 (A) (43) 5.4.1994 (19) JP  
 (21) Appl. No. 4-247680 (22) 17.9.1992  
 (71) SEIKOSHA CO LTD (72) YOSHIHIRO KONDO  
 (51) Int. Cl<sup>s</sup>. B41J2/045, B41J2/055

**PURPOSE:** To obtain an ink jet head having a shape memory alloy with an improved reliability, a reduced size, and an enhanced density.

**CONSTITUTION:** A pressurizing vibration body 4 is heated by a drive circuit 5. In this manner, firstly, a first shape memory alloy 2 reaches a transformation temperature and changes into a matrix phase, thus expanding a volume of an ink chamber 1. Next, a second shape memory alloy 3 reaches a transformation temperature and changes into a matrix phase, thus reducing a volume of the ink chamber 1. A volume change from the volume of the ink chamber 1 at the first transformation temperature to the volume of the ink chamber 1 at the next transformation temperature results in ink liquid being pressurized and jetted out of a nozzle 7 as an ink liquid drop.

